

# ABSTRACT

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**Title of Thesis:** Use of Liquid Chromatography in Pharmaceutical Analysis IV.

In this diploma thesis the retention behaviour of drugs using extreme pH of mobile phases on column Kinetex EVO C18 (150×3,0 mm) was tested. Mobile phases with pH 2,8; 5,7 and 10,0 were tested with various organic and aqueous phases. The following drugs were included among the test substances: quetiapine and its metabolites 7-hydroxyquetiapine and norquetiapine, zolpidem, aciclovir, clotrimazole, diclofenac, metformin and their impurities, risperidone and lamotrigine. For further testing the quetiapine, zolpidem, risperidone and lamotrigine were chosen using the mobile phase with MeOH, ACN and phosphate buffer solution pH 2.8 in ratio 5:15:80. The flow was set to 1 ml/min with the temperature of column 26 °C. Wavelengths with the best sensitivity in UV detection area were looking for. The best sensitivity was achieved at 210 nm and 240 nm. We were also looking for a suitable internal standard. From several used compounds was chosen medazepam as internal standard, which was eluted behind the last peak. The deproteinization and liquid-liquid extraction were tested for the analysis of biological material. Liquid-liquid extraction was more efficient for its higher yield. Selected parameters of validation (selectivity, limit of quantification, limit of detection, linearity and precision) were used. The method was applied to the analysis of real samples.